



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,966	11/26/2003	Martin Dionne	71624 CCD	9523
7590	06/27/2006		EXAMINER	
Christopher C. Dunham c/o Cooper & Dunham LLP 1185 Ave. of the Americas New York, NY 10036			LEADER, WILLIAM T	
			ART UNIT	PAPER NUMBER
			1742	
			DATE MAILED: 06/27/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/723,966	DIONNE ET AL.
	Examiner William T. Leader	Art Unit 1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) 9-20 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>3/15/04; 4/18/05</u> .	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-8, drawn to a method of making an aluminum reduction cell component, classified in class 264, subclass 603.
 - II. Claims 9-20, drawn to an aluminum reduction cell component, classified in class 204, subclass 280.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process can be used to make products other than that of the group II claims. For example, the process could be used to make a refractory furnace liner.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Christopher Dunham on June 1, 2006, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Bergeron et al (CA 2 350 814 A1).

Art Unit: 1742

9. The admitted prior art is that found on pages 1-3 of the specification under the heading "Background of the Invention." The admitted prior art shows that a process for making cathodes for an aluminum reduction cell by forming a composite of a carbon-containing component and a metal boride such as titanium diboride is known.

10. The process of instant claim 1 differs from that of the admitted prior art by reciting the inclusion of an additive with specified properties in addition to the carbon-containing component and titanium diboride (TiB_2) of the admitted prior art. The Bergeron et al document is directed to a process for making a cathode for an aluminum reduction cell. Bergeron et al disclose that the cost of metal borides such as titanium diboride is high, while the cost of metal oxides and boron oxides, which constitute precursors of metal borides, is considerably lower. Bergeron et al disclose that metal boride can be made in situ when subjected to heat by providing a mixture of metal boride precursors in admixture together with a carbonaceous material. The precursors may be a mixture of boron oxide and titanium dioxide. See page 4, line 30 to page 5, line 26 and page 7, lines 18-28. The precursor materials must be mixed together before they are mixed with other components of the cathode materials (page 5, line 28 to page 6, line 3). The precursor materials of Bergeron et al correspond to the additive recited in the instant claims.

11. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have replaced a portion of the titanium diboride mixed with a carbon-containing component of the admitted prior art with precursors which form titanium diboride in situ as taught by Bergeron et al because the cost of the finished cathode would have been reduced since the precursors are considerably less expensive than the titanium diboride itself. With respect to the percentage of precursors utilized,

Bergeron et al discloses that the oxide mixture may be mixed with a conventional anthracite/itch mixture in a ratio of 30-60% to 40-70% by weight. Bergeron et al further discloses that an amount of TiB₂ such as 10% may be included in the mix. Thus, Bergeron et al clearly contemplate the inclusion of both TiB₂ itself as well as precursors to form additional TiB₂. See page 10, line30 to page 11, line 15. The amount of titanium diboride to have been replaced would have been a matter of routine optimization based on the amount of cost reduction desired and the properties of the resulting cathode block.

12. With respect to claim 3 and 4, Bergeron et al disclose that the precursors may be TiO₂ and B₂O₃. See page 10, line 23. With respect to claim 5, Bergeron et al disclose that the ratio of TiO₂ to B₂O₃ is 40-50 TiO₂ to 50-60 B₂O₃. See page 10, lines 22-24. With respect to claims 6 and 7, Bergeron et al disclose that particles smaller than 30 μm in size react more completely and more quickly since a more intimate mixture of the precursor oxides can be obtained. See page 10, lines 14-17.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mizrah et al (4,492,670) discloses a process for manufacturing cathodes from starting materials which contain titanium, boron and carbon in powder form.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 571-272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WL
William Leader
June 16, 2006

R
ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700